

# PATENT COOPERATION TREATY

## PCT


### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 08 MAR 2005

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Applicant's or agent's file reference <b>4646N/NEP</b>	<b>FOR FURTHER ACTION</b>		See Form PCT/PEA/416
International application No. <b>PCT/GB2004/001263</b>	International filing date (day/month/year) <b>25.03.2004</b>	Priority date (day/month/year) <b>28.03.2003</b>	
International Patent Classification (IPC) or national classification and IPC <b>C03B27/044</b>			
Applicant <b>PILKINGTON PLC et al.</b>			
1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of 5 sheets, including this cover sheet. 3. This report is also accompanied by ANNEXES, comprising: a. <input type="checkbox"/> sent to the applicant and to the International Bureau) a total of sheets, as follows: <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).			
4. This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the opinion <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application			
Date of submission of the demand  <b>27.10.2004</b>		Date of completion of this report  <b>07.03.2005</b>	
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer  <b>Deckwerth, M</b>  Telephone No. +49 89 2399-7069	



**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/GB2004/001263

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**Box No. I Basis of the report**

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1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

**Description, Pages**

1-14 as originally filed

**Claims, Numbers**

1-18 as originally filed

**Drawings, Sheets**

1/5-5/5 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1-18
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-18
Industrial applicability (IA)	Yes: Claims	1-18
	No: Claims	

2. Citations and explanations (Rule 70.7):

**see separate sheet**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Reference is made to the following documents:  
D1: WO-A-002387  
D2: US-A-4 816 058  
D3: US-B1-6 339 941  
D4: US-A-4 515 622  
D5: US-A-3 388 984  
D6: US-A-4 888 038
2. As to claim 1, the document D1 (especially Fig. 1-4; page 8, line 7-p. 10, l. 23; p. 13, l. 7-15) is regarded as being the closest prior art to the subject-matter of claim 1. The subject-matter of claim 1 differs from the apparatus disclosed in D1 by the feature in l. 10-11 of the preamble of claim 1, "the length of the quench nozzles exceeding their diameter".  
Nozzles having a length exceeding their diameter are commonly applied in the art as illustrated by D2 (Fig. 7), D3 (Fig. 5) or D4 (Fig. 6-8), and the person skilled in the art is aware of the fact that an increased length of the nozzles leads to well-defined quenching gas jets. As a consequence, the apparatus as defined in claim 1 does not fulfill the requirements of Article 33(3) PCT.
3. The features defined in claims 2-5, 7, 8 are known from D1.
4. As to claim 6, it is known from D1 (esp. p. 9, l. 27-p. 10, l. 1) that the distance between the nozzles of the blastheads and the sheet to be quenched is an important parameter for optimum quenching. To enable the adjustment of this distance, it is therefore obvious to the skilled person to introduce upper and lower blastheads which can be moved towards and away from each other as it is disclosed in D5 (esp. Fig. 1; col. 3, l. 9-28). Therefore, the subject-matter of claim 6 does not fulfill the requirements of Article 33(3) PCT.
5. The feature defined in claim 9 is known from D1, D2 or D3.
6. The features defined in claims 10 and 11 are nozzle designs commonly known in the art and e.g. known from D2 or D4.

7. As to claim 12, the nozzle bar can be made of any material as long as it fulfills the required process conditions. The skilled person is capable of selecting the appropriate material. Properties of materials, let it be metals, ceramics or polymers can be found in handbooks. Therefore, the subject-matter of claim 12 does not fulfill the requirements of Article 33(3) PCT.
8. The subject-matter of claim 13 does not meet the requirements of Article 33(3) PCT, since the apparatus used for this method lacks an inventive step (see paragraph 2.1) and the features defined in the characterizing part of claim 13 are known from D1.
9. The features defined in claim 14 are a direct consequence of the construction of the nozzle bars and blastheads. Quenching by means of arrays of nozzels whose curvature is adapted to the complex curvature of the glass sheet to be tempered is only effective if the distance between these nozzles and the glass sheet is within certain limits (see D1: esp. p. 9, l. 27-p. 10, l.1; D5: esp. Fig. 1; col. 3, l. 9-28). In the case of a larger distance, the intended quenching effect is averaged out. Since bent glass sheets are to be tempered, the blastheads comprising the correspondingly curved nozzle arrays have to be moved away from each other in order to allow the passage of the incoming and outgoing bent glass sheet and towards each other in order to arrive at the optimum quenching distance with respect to the glass surfaces.  
Therefore, the subject-matter of claim 14 does not fulfill the requirements of Article 33(3) PCT.
10. The features defined in claim 15 are known from D1.
11. As to claim 16, the "domino 5" pattern is a quench pattern commonly known in the art (see D6: col. 7, l. 45-col. 8, l. 58, especially col. 8, l. 28).
12. The feature defined in claim 17 is an effect of the actual parameters of the method and obvious to the skilled person.
- 2.12 The subject-matter of claim 18 does not meet the requirements of Article 33(3) PCT, since the apparatus according to any one of claims 1 to 12 lacks an inventive step and its incorporation into a known production line for bending and tempering glass sheets is obvious.